# The Value of Tree Canopy

## in Georgia Communities

**Trees make Georgia communities more livable and attractive.** They provide many environmental, social, and economic benefits that translate into measurable dollar values. Many different methods have been used by community forest managers and researchers over the past 20 years to calculate and communicate the value of trees to decision makers and the public. Some of their findings are summarized in this publication.

**Trees reduce energy usage and cooling and heating costs.** If properly placed for optimal shading of buildings and air conditioners, trees can provide a 17% to 75% decrease in summer cooling costs ($38 to $242)! The presence of a thick evergreen canopy can increase winter heating costs in some areas, but generally trees reduce heating costs by buffering a building against cold winter winds.

**Trees reduce stormwater runoff and the amount and cost of water control structures.** The value of trees can be measured as the reduction in construction and material costs for stormwater control structures and systems because trees intercept 7% to 22% of precipitation. One study has shown that for every tree 2 cents in water control costs are saved for every gallon of water intercepted during a twelve-hour storm. In a medium sized city, this equates to a 17% reduction of 11.3 million gallons, and a savings of $226,000!

**Trees reduce soil erosion.** They can reduce sediment movement off a site by 95%. This keeps our lakes, rivers, and streams cleaner and healthier. In a medium sized city, the amount of soil saved annually can be as much as 10,886 tons!

**Trees purify the air, producing oxygen and absorbing pollutants and particulates.** A large, healthy tree can produce enough oxygen each day for 18 people. Trees reduce pollution and absorb carbon monoxide, sulfur dioxide, nitrogen dioxide, and particulates. Deciduous trees remove up to 9% of particulates and evergreens trees can remove up to 13% of particulates in the air. This benefit can be valued based upon current pollution control technology costs at $136 per day, or nearly $50,000 per year!

**Trees store carbon.** Trees can absorb and store a yearly average of 13 pounds of carbon each. A community forest can store as much as 2.6 tons of carbon per acre per year. Community trees across the United States store 6.5 million tons per year, resulting in a savings of $22 billion in control costs. The value associated with the removal of each pound of carbon is $1.70. Therefore, each tree creates a savings through carbon storage of $22 per year.

**Trees increase property values.** For a single home, trees can provide an owner with a 4% to 27% increase in property value. A single tree can add up to 9% to the value of a residential property. One study has shown that each hardwood tree on a site adds $333 to the property value, each large hardwood adds $336, and each pine adds $257. Trees also attract more residents and visitors to a community, adding value by increasing the community's tax and economic base.

**The annual ecological contribution of the average community tree was estimated in a 1985 study to be $270.** With all of the previous estimates in mind, it seems very reasonable that each community tree provides benefits valued at a *minimum* of $270 annually. If the useful life span of a tree is 50 years, then its value could be estimated to be at least $13,500 at its maximum size and age. If the useful life span of a tree is 100 years, then its value could be estimated to be at least $27,000 at its maximum size and age. Smaller trees, younger trees, and trees that are declining or in poor health would contribute less value than this amount. Larger, healthier, older, trees would likely contribute more than this amount.

**Because trees provide us with a healthier, more aesthetically appealing, and relaxing environment in which to live, they have value.** We can optimize the value that trees provide by conserving tree canopy and helping trees live a longer and healthier life.

Listed below are some ways that you can help conserve tree canopy in our Georgia communities, promote tree health, and reduce public infrastructure costs.

- ✓ Remove only those trees necessary for construction on new development sites. Protect the trunk, crown, and roots of trees remaining on site from construction damage by fencing at the dripline (edge of branches).
- ✓ Replace trees removed on new or existing sites with good quality native trees.
- ✓ Plant large maturing tree varieties--canopy trees--where adequate space exists.
- ✓ Create and protect growing space for trees above and below ground.
- ✓ Know the site requirements (sunlight, soil moisture, growing space) of the trees you're planting and match them to site conditions.
- ✓ Plant good quality trees, plant them properly, and water them regularly throughout the establishment period, for at least three years after planting.
- ✓ Maintain healthy trees by inspecting, mulching, and pruning regularly throughout their life.

For more information on the value of trees in your community, contact the organizations listed below...

Georgia Forestry Commission
P.O. Box 819
Macon, Georgia 31202-0819
1(800)GA-TREES

Georgia Urban Forest Council
P.O. Box 961
Macon, Georgia 31202
1(800)994-GUFC
gufc@alltel.net

American Forests
www.amfor.org

International Society of Arboriculture
www.ag.uiuc.edu/~isa/

National Arbor Day Foundation
www.arborday.org

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